Code: R7411211

R07

B.Tech IV Year I Semester (R07) Supplementary Examinations, May 2013

IMAGE PROCESSING

(Information Technology)

Time: 3 hours Max. Marks: 80

Answer any FIVE questions

All questions carry equal marks

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1 (a) What are the elements of digital image processing? Discuss them in detail.
(b) Briefly explain image model.
(c) What are the basic relationships exist between pixels?

2 (a) What are the differences between image enhancement and image restoration techniques?
(b) How can the image sharpening are achieved in frequency domain by a high pass filtering process?
(c) Explain how neighborhood averaging technique is used to reduce the image blurring.

3 (a) Describe about image degradation model in detail.
(b) What are the effects of diagonalization on the degradation model?
(c) Explain about inverse filtering.

4 (a) How are color images smoothed and sharpened? Explain one technique of each.
(b) Define thresholding. Present the color image thresholding.

5 (a) What is meant by error free compensation and explain a method for it?
(b) Explain about image compression standards.

6 (a) Explain with examples dilation and erosion operations.
(b) Explain about:
(i) Hit or miss transformation.
(ii) Morphologic algorithms.

7 (a) What is meant by image segmentation? Discuss various edge detection techniques.
(b) Explain about region splitting and region merging.

8 (a) Explain how the chain code board's representation is done. Give an example.
(b) Explain about:
(i) Fourier transform relations.
(ii) Euler's number for shape descriptors.

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